

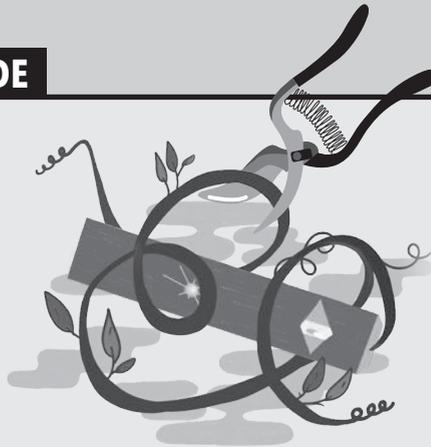
Heads Up: Real News About Drugs and Your Body

Brought to you by Scholastic and the scientists at the National Institute on Drug Abuse, National Institutes of Health, U.S. Department of Health and Human Services

LESSONS & ACTIVITY SHEETS INSIDE

How Nicotine Affects the Teen Brain

PAGE 2



Prescription Stimulants: What You Need to Know

PAGE 4



Stressed Out?

PAGE 6



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Nicotine and the Teen Brain

While student smoking rates have declined in recent years, e-cigarette use has risen—an alarming trend, because most vaping devices contain the highly addictive drug nicotine. Share the article “How Nicotine Affects the Teen Brain” to help students understand how nicotine is not only highly addictive but also can cause lasting effects on their brain. Then have students complete the “Vaping Health Risks” presentation activity to guide them to conduct deeper research into specific vaping risks and help spread the word to their peers.

Reading-Comprehension Questions

1 Describe how the brain’s reward system works. (*The brain’s reward system is activated when you experience something enjoyable, like laughing with friends. That causes a release of the natural chemical dopamine. Dopamine helps your brain note this activity as something that should be remembered and repeated.*)

2 What is addiction? (*Addiction is a brain disorder that causes a person to continue to seek out and use a drug despite negative consequences in their lives.*)

3 Explain how using nicotine can lead to addiction. (*When someone uses nicotine, it causes the brain to release dopamine. Nicotine causes a larger- and longer-than-normal release of dopamine. The surge in dopamine causes a strong reaction in the reward system, so the person feels a strong desire to use nicotine again. Over time, this leads to addiction.*)

4 Why are teens especially vulnerable to nicotine addiction? (*The adolescent brain is still developing and won’t be fully mature until the person reaches their mid-twenties. Because it is still developing, the brain is more vulnerable to the changes caused by nicotine.*)

5 Explain one reason it can be challenging for someone who is addicted to nicotine to quit. (*If someone who is addicted to nicotine tries to quit, they can experience uncomfortable withdrawal symptoms, including depression and powerful cravings, that make it hard to stop.*)

6 What are some ways teens can help support a healthy development

of their brains? (*Don’t use drugs like nicotine. Take on new challenges that have a positive and stimulating influence on brain development, such as learning a new skill.*)

Critical-Thinking Writing Prompts

Grades 6–8 Both conventional cigarettes and vaping devices are illegal for teens. Write an argument to support the existence of this law. Include supporting evidence.

Grades 9–10 How does the brain’s reward system reinforce certain types of behavior? Explain how this can have positive and negative effects on a person’s development.

Grades 11–12 Some people who use nicotine report using it because they think it helps them relax. Explain why, in reality, nicotine can have the opposite effect. Then, suggest healthier alternatives for relaxation.

Remote Learning Suggestions

Send students links or print copies of the student article and student activity, and instruct them to read independently. Share the reading-comprehension questions on a digital discussion board, on a video call, through email, or in a print packet, and have students respond online or in hard copy. When students have completed the student activity, presentations can be delivered over a class video call, through a prerecorded video clip, or by sharing links or attachments. Wrap up by having students share (digitally or in writing) 3–5 new things they learned or thought about in a new way as a result of their classmates’ presentations.

Subject Areas

- Science, Biology, Public Health
- English Language Arts
- Health/Life Skills

Standards, Grs. 6–12

Common Core State Standards (CCSS)

RI.2

- ▶ Determine central ideas or themes of a text; summarize key supporting details

RI.9

- ▶ Analyze how two or more texts address similar topics

SL.4

- ▶ Present information and supporting evidence appropriate to task, purpose, and audience

Next Generation Science Standards (NGSS)

MS-LS1.D/HS-LS1.D Information Processing

Practice Obtaining, Evaluating, and Communicating Information

Cross-Cutting Concept Cause and Effect: Mechanism and Prediction

Additional Lesson Resources

Vocabulary Support: Download terms and definitions at scholastic.com/headsup/how-nicotineaffectstheetenbrain

More Lessons on Science and Health:

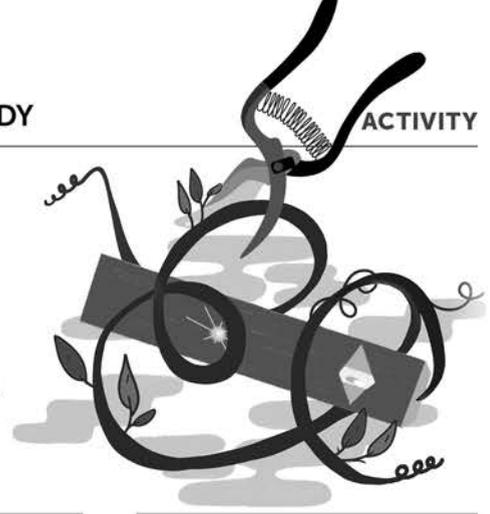
- ▶ headsup.scholastic.com/teachers
- ▶ teens.drugabuse.gov



National Institute on Drug Abuse

Vaping Health Risks: Presentation Activity

Many teens don't know the real health risks of vaping or assume it is safer than smoking conventional cigarettes. Follow the steps below to create a presentation to help your peers get the real facts.



STEP 1: RESEARCH AND GATHER INFORMATION

Read the passage below, then explore the links in the Find Out More section beneath it. As you read, make notes of details you think teens should know about the health risks of vaping and nicotine.

What Are the Dangers of Vaping?

Recent surveys show that the number of teens who have tried vaping devices (also called e-cigarettes) is on the rise. While many kids assume that e-cigarettes are safe, the truth is that vaping is harmful to teens in many ways.

All vaping devices basically work the same. When someone puffs on the mouthpiece, a battery heats up a liquid made up of chemicals like nicotine and flavoring. The liquid gets turned into an aerosol that the user inhales. (The aerosol resembles a vapor—that's where vaping gets its name.)

Almost all vaping devices, including Juul products and Puff Bars, contain nicotine. Found naturally in tobacco, nicotine is especially harmful to teens because their brains are still developing. Using nicotine can affect parts of the brain that control learning and attention as well as cause addiction. In fact, the number of teens who say they use e-cigarettes because they are "hooked" more than doubled between 2018 and 2019.

Teens who vape may not realize how much nicotine they're being exposed to. The nicotine content of one Juul cartridge and some Puff Bars is the same amount found in an entire pack of cigarettes.

Vaping also exposes people to other dangerous materials. Flavoring chemicals are added to many vaping liquids, which can be harmful if inhaled into the lungs. Vaping aerosols may also contain formaldehyde—a hazardous chemical that can cause cancer—and toxic metals like cadmium.

STEP 2: CREATE YOUR PRESENTATION

Think about how you can use information you've gathered to create a presentation that will help your peers understand the dangers of vaping. Be creative! For example, test your classmates' knowledge by creating one of the following:

- **Online quiz game** (try using the game platform Kahoot!)
- **Flip cards with questions about key facts**
- **Video**
- **Blog post**
- **Collection of sample social media posts**
- **Choose your own idea!**

Make sure your presentation includes important facts and surprising details that will capture your audience's attention. Be sure your facts come from trusted sources only.

Find Out More

• **Vaping Risks interactive:** [scholastic.com/headsup/vapingrisksinteractive](https://www.scholastic.com/headsup/vapingrisksinteractive)

• **Three Surprising Risks From Vaping:** [teens.drugabuse.gov/vapingrisks1](https://www.teens.drugabuse.gov/vapingrisks1)

• **Monitoring the Future 2019: The Highs and Lows of Vaping:** [teens.drugabuse.gov/vapingrisks2](https://www.teens.drugabuse.gov/vapingrisks2)



What You Need to Know About Prescription Stimulants

When used as prescribed by a doctor, prescription stimulants safely and effectively help kids with ADHD. But misuse can be very dangerous. Share the article “What You Need to Know About Prescription Stimulants” to help students understand the very real health risks of misusing these drugs. Then assign the “Important Facts About Addiction” activity sheet, and guide students to synthesize what they have learned by creating an eye-catching infographic for other teens.

Reading Comprehension Questions

- Why is a prescription for stimulants safe for a person with ADHD but not safe for a person without ADHD? (*Scientists believe that people with ADHD have differences related to the brain chemicals dopamine and norepinephrine. Prescription stimulants help boost and balance levels of these chemicals and alleviate ADHD symptoms. Since people without ADHD have different brain chemistry than people with ADHD, the drug affects their brain and body in different and potentially dangerous ways.*)
- How do prescription stimulants help to treat symptoms of ADHD? (*The drugs help boost and balance levels of the chemicals dopamine and norepinephrine in the brains of people with ADHD; this helps people with ADHD focus.*)
- Identify three examples of misusing prescription stimulants. (*Misuse of prescription stimulants includes using them in any way other than prescribed by a doctor. This could mean taking a higher dose than prescribed, using the drugs for reasons other than treating ADHD, or using drugs prescribed to someone else.*)
- How can misusing prescription stimulants be dangerous to your health? (*Misusing prescription stimulants can cause a pounding heart, anxiety, extreme anger, and paranoia—as well as life-threatening conditions like stroke and heart attack.*)
- How can someone become addicted to prescription stimulants? (*When prescription stimulants are misused, they can cause abnormally high levels of dopamine in the brain. This increases the chance that the person will use the drugs again. Over time, this can lead to addiction.*)

Critical-Thinking Writing Prompts

- Grades 6–8** Explain why a doctor’s prescription is needed to obtain prescription stimulants.
- Grades 9–10** Imagine your friend is taking prescription stimulants because they believe it helps them study better for tests. Write a letter to your friend explaining why this behavior is risky.
- Grades 11–12** Use what you learned in the article to explain what the illustration in the article communicates. What effects of stimulants are depicted in the illustration?

Remote Learning Suggestions

- Send** students links or print copies of the student article and student activity, and instruct them to read independently. (For striving readers, record yourself reading the article aloud and instruct them to follow along with the recording.)
- Use** videoconferencing to discuss the reading comprehension questions together as a class.
- Have** students complete the student activity on the next page, then create an online folder so they can share their infographics with the class.
- Wrap** up the lesson with an online or phone discussion synthesizing what they have learned about the importance of prescription stimulants, but also the dangers of misusing them. What facts did they learn from their classmates’ infographics?

Subject Areas

- Science, Biology, Public Health
- English Language Arts
- Health/Life Skills

Standards, Grs. 6–12

Common Core State Standards (CCSS)

- RI.2** ▶ Summarize key supporting details of a text.
- RI.9** ▶ Analyze how two or more texts address similar topics in order to build knowledge.
- W.2** ▶ Write informative texts to convey complex ideas and information clearly and accurately through effective selection and organization of content.

Next Generation Science Standards (NGSS)

- MS-LS1.D/HS-LS1.D** Information Processing
- Practice** Obtaining, Evaluating, and Communicating Information
- Crosscutting Concept** Cause and Effect

Additional Lesson Resources

- ▶ Tiered Vocabulary Tools: Visit scholastic.com/headsup/prescriptionstimulants for a vocabulary list to support this article.
- ▶ headsup.scholastic.com/teachers
- ▶ teens.drugabuse.gov



Important Facts About Addiction

Learn about this disease, then create an infographic to share facts with other teens.

STEP 1: GATHER INFORMATION

Read the passage below and take notes as you read.

What Is Addiction?

When people compulsively and continuously use drugs—despite the harm to their body and mind, as well as to others—it's considered an **addiction**. People with an addiction may end up damaging their relationships with family and friends, find it difficult to stay in school or hold down a job, and stop enjoying everyday activities and hobbies they once loved.

Who Is at Risk?



There's no one "type" of person who is at risk for drug addiction. However, certain **risk factors** increase a person's chance of addiction, including:

- Using drugs at an early age. (This is because the brain continues to develop until a person's mid-20s.)
- Mental health problems such as depression
- Having family or friends who use or misuse alcohol or drugs
- Trauma or stressful situations: friends in crisis, extreme hunger, family issues, unsafe housing, financial insecurity



On the other hand, there are **protective factors** that decrease the chance that a person will develop addiction. These include:

- Strong family bonds
- Goals and aspirations for the future, e.g., college, career, marriage and family, travel, etc.
- Strong connections and

relationships at school, on sports teams, in clubs, etc.

It's important to remember that even if someone has risk factors, they may never use or develop an addiction to drugs. On the flip side, you should know that even a person who has protective factors can develop addiction.

Getting Help

Addiction is treatable. Behavioral therapies and, in some cases, medications that treat the symptoms can help manage the disease. If you or someone you know needs help, visit **findtreatment.samhsa.gov** or call **800-662-4357** to find addiction treatments in your area.

STEP 2: CREATE AN INFOGRAPHIC

Studies show that some teens put themselves at risk of addiction by misusing prescription stimulants and other drugs. How can you help?

- Create an eye-catching infographic that explains the risks to teens.
- Include a mix of text and visuals, such as diagrams, graphs, and images.



STRESSED OUT?

Stress is a part of every teen's life, even more so during intense challenges such as a pandemic, racial discrimination, and life transitions. But uncontrolled stress can cause serious health problems and increase the risk that students may use drugs to attempt to deal with stressors, including mental health issues and trauma. Use these materials to help your students understand how stress affects their body, and learn healthy ways to cope with pressure.

Reading-Comprehension Questions

1 What is the fight-or-flight response and why is it an important process in the body? (*The “fight or flight” response prepares the body to face a challenging situation. It boosts energy in the body if a physical reaction is needed to survive by fighting or fleeing.*)

2 Beyond helping you to survive in emergencies, how can stress be helpful to you? What are some examples? (*Stress can increase focus and energy. This can be helpful, for example, in studying for or taking a test. [Additional answers may apply.]*)

3 How can uncontrolled stress lead to health problems? (*Ongoing or chronic stress can prevent the body's stress response from returning to normal levels. This has many health risks including getting sick; sleep problems; headaches; anxiety and depression; problems with learning and memory; and heart disease, obesity, and diabetes. It can also increase the risk for drug use and for developing an addiction.*)

Critical-Thinking Writing Prompts

All Grades: Imagine your friend tells you they are feeling overwhelmed by stress. What advice would you give them?

Grades 6–8: What are signs that may indicate a person is experiencing chronic stress?

Grades 9–12: How might chronic stress as a teenager impact a person's life into adulthood? Support your answer with evidence from the text.

Answer Key: Student Activity Sheet “Stress Test”

Part 1: 1. c; 2. e; 3. b; 4. a; 5. d

Part 2: Answers will vary but should include specific evidence from the activity sheet as well as the student article about the specific body reactions to stress and the reasons for them.

Part 3: Answers will vary.

Remote Learning Suggestions

- **Create** an online discussion board and ask students to share at least one situation in which they have felt stressed. Alternatively, have students journal individually.
- **Send** students links or print copies of the student article and student activity. Instruct students to read the article independently.
- **Organize** small groups of students and send each group the reading-comprehension questions. Schedule online video chats for each group to discuss the questions. Alternatively, have students respond in writing individually.
- **Have** students complete the student activity sheet. Then, instruct them to return to the online discussion board or journal and share a strategy they could use to try to cope with pressure. A few days later, have them describe the results.

Subject Areas

- Science, Biology
- English Language Arts
- Health/Life Skills

Standards, Grs. 6–12

Common Core State Standards (CCSS)

RST.1

- ▶ Cite specific textual evidence to support analysis of science and technical texts.

W.2

- ▶ Write informative/explanatory texts.

Next Generation Science Standards (NGSS)

MS-LS1.A/HS-LS1.A Structure and Function

Practice Obtaining, Evaluating, and Communicating Information

Crosscutting Concept Systems and System Models

Additional Lesson Resources

Vocabulary Tools: Visit scholastic.com/headsup/stress-vocabulary-tools

More Lessons on Science and Health:

- ▶ headsup.scholastic.com/teachers
- ▶ teens.drugabuse.gov



National Institute on Drug Abuse

STRESS TEST

PART 1 MATCH THE RESPONSE

When you feel under stress, your body's stress response system kicks into gear to tackle the situation. Match each body organ below with the way in which it responds to stress.



1. Heart

a. Tense to protect against injury.



2. Brain

b. Releases glucose into the bloodstream to power cells.



3. Liver

c. Rate increases to push blood through the body faster.



4. Muscles

d. Activity decreases so energy can be used in other parts of the body.



5. Stomach/ Intestines

e. Signals the release of stress hormones.

PART 2 THINK ABOUT IT

Use information from this activity sheet, as well as the article "Stressed Out?" to respond to the questions below on a separate sheet.

1. Identify a situation in which you experienced stress.

2. Write about how your body responded to the stressful event, and explain why your body reacted the way it did.

3. What strategies will you use to reduce this type of stress in the future?

PART 3 COPING WITH STRESS

Stress-release strategies can help you cope with day-to-day stress so that it doesn't turn into chronic stress. Pick one of these activities and try it for at least 10 minutes every day for a week. Report back to your class how it helped you or not.



Deep Breathing Focus: Find a quiet space. Breathe deeply through your nose for a count of four. Hold your breath for a count of two. Then, let the breath out through your mouth for a count of four. Try to continue for 10 minutes or more.



Physical Activity: Lace up and go for a walk or a run. Try to get your heart pumping, but not so much that you can't talk. In fact, you might ask a friend or family member to join you to help make it more fun!



Step Away From Your Phone: Put your phone away and do not check it for one hour on the first day, then gradually increase that time for a few days. Let your parents know, and ask them not to call you unless absolutely necessary. Only pick up the phone for them. At first you may feel stressed and worried about what you are missing. But see if it gets better each day. Track your progress.

MORE FREE TEACHER RESOURCES: [scholastic.com/headsup/teachers](https://www.scholastic.com/headsup/teachers)

Lessons, Texts & Printables



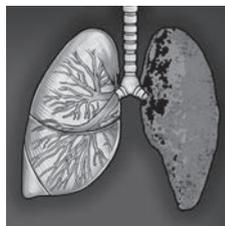
Science/ELA materials that teach important facts and elicit critical thinking

Videos



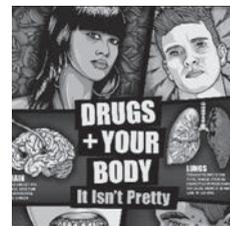
Classroom videos that illustrate the science of drug misuse

Interactives



Dynamic online supplements that engage students in core information

Poster/ Teaching Guides



Engaging visuals with activities for comprehension and reinforcement

COMPILATION 2020-21 Teacher Edition

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RESEARCH DISSEMINATION CENTER